Page 4, line 17, replace "Fig 2 illustrates" with -Figures 2A-2E illustrate-

Page 4, line 19, replace "Fig 3 illustrates" with -Figures 3A-3D illustrate-

Page 6, line 3, replace "Permissible connections of the N phase windings are either from the center point" with -Permissible connections of the N phase windings (1) are either from the center point-

**In the Claims**

Please cancel claims 35-39, 46, 60, 61, 63 and 85-87 without prejudice

Please amend claims 34, 40-45, 47-59, 62, 64-67, 83, 84, 88 and 89 to read as follows:

34. A high phase order induction machine drive system, comprising

a) an inverter system for the synthesis of a plurality of phases of alternating current output, each phase electrically connected to at least one inverter terminal, and

b) an induction motor comprising N phases, where N is greater than 3, connected mesh to said inverter terminals, said mesh characterized in that:

each motor phase is electrically connected to a first inverter terminal and a second inverter terminal S + 1 inverter terminals distant from the first inverter terminal in order of electrical phase angle, where S is the skip number, and

the phase angle difference between the pair of inverter terminals to which each motor phase is connected is identical for each motor phase.

40. The high phase order induction machine drive system of claim 34 wherein said phase angle difference is approximately 120 electrical degrees.

41. The high phase order induction machine drive system of claim 34 wherein N is a multiple of 3, and S = N/3.

42. The high phase order induction machine drive system of claim 35 wherein said alternating current output is selectable between a fundamental frequency component and a fundamental frequency component multiplied by three.

43. The high phase order induction machine drive system of claim 34 wherein said alternating current output comprises a variable proportion of a fundamental frequency component and a third harmonic frequency component.

44. The high phase order induction machine drive system of claim 34 wherein N = 17 wherein S = 5.

45. The high phase order induction machine drive system of claim 34 wherein said inverter output comprises a variable degree of a third harmonic component superimposed upon the fundamental frequency component.

47. The high phase order induction machine drive system of claim 34 wherein S = (N-3)/2, and wherein said alternating current output is variable between: an increase in the phase angle difference in response to a signal to increase the impedance of the motor, a decrease in the electrical phase difference as a response to a signal to decrease the impedance of the motor, and a minimum phase angle difference corresponding to the fundamental frequency.

48. The high phase order induction machine drive system of claim 34 wherein S = 0, and wherein said alternating current output is variable between: an increase in the phase angle difference in response to a signal to decrease the impedance of the motor, a decrease in the phase angle difference as a response to a signal to increase the impedance of the motor, and a minimum phase angle difference corresponding to the fundamental frequency.

49. The high phase order induction machine drive system of claim 34 wherein N is odd.

50. The high phase order induction machine drive system of claim 34 wherein said S = (N-3)/2.

51. The high phase order induction machine drive system of claim 34 wherein N is any even number greater than 4 and wherein said mesh connection comprises a plurality of mesh subsets wherein each subset comprises an odd number of phases.

52. The high phase order induction machine drive system of claim 51 each of said subsets having a skip number of N/3, if N is a factor of 3; and (N/3)-1, rounded to the nearest integer, if N is not a factor of 3.

53. The high phase order induction machine drive system of claim 52 wherein said alternating current output comprises a variable proportion of a fundamental frequency component and a third harmonic frequency component.

54. The high phase order induction machine drive system of claim 51 wherein said subsets having a skip number of (N-3)/2.

55. The high phase order induction machine drive system of claim 51 wherein said alternating current output comprises harmonic frequency components.

56. The high phase order induction machine drive system of claim 51 wherein said alternating current output comprises harmonic components superimposed upon a fundamental frequency component.

57. The high phase order induction machine drive system of claim 56 wherein said harmonic comprise only odd order harmonics.

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58. The high phase order induction machine drive system of claim 34 wherein said alternating current output comprises a square wave component.

59. The high phase order induction machine drive system of claim 34 further comprising a receptor for receiving signals to vary the impedance of the motor, and wherein said alternating current output comprises variable harmonic content to the waveform according to the signals received by the receptor.

62. The high phase order induction machine drive system of claim 34 wherein S = 0.

64. The high phase order induction machine drive system of claim 34 wherein $N \geq 9$.

65. The high phase order induction machine drive system of claim 34 wherein said motor having 18 phases divided into two subsets of nine phases, wherein each subset having a separate mesh connection with a skip number of 3 within that subset.

66. The high phase order induction machine drive system of claim 34 wherein said motor is a linear induction motor.

67. The high phase order induction machine drive system of claim 34 wherein said windings comprise single inductors per slot.

83. A high phase order motor having more than three phases, connected to inverter output elements with a mesh connection, said mesh characterized in that: each motor phase is electrically connected to a first inverter terminal and a second inverter terminal S + 1 inverter terminals distant from the first inverter terminal in order of electrical phase angle, where S is the skip number, and the phase angle difference between the pair of inverter terminals to which each motor phase is connected is identical for each motor phase.

84. The high phase order motor of claim 83, wherein S = (N-3)/2.

88. The high phase order motor of claim 83 wherein S = 0.

89. The high phase order motor of claim 83 wherein S = (N/3)-1, rounded to the nearest integer.

Please append new claims 90-107 as follows:

90. (New) The high phase order induction machine drive system of claim 34 wherein N is not a multiple of 3, and wherein S = (N/3)-1 rounded to the nearest integer.

91. (New) The high phase order induction machine drive system of claim 34 wherein said inverter output comprises a harmonic frequency component.

92. (New) The high phase order induction machine drive system of claim 91 wherein said harmonic frequency component is an odd harmonic.

93. (New) The high phase order induction machine drive system of claim 91 wherein said harmonic frequency component is third harmonic.

94. (New) The high phase order induction machine drive system of claim 34 wherein said alternating current output comprises a fundamental frequency component and a harmonic frequency component.

95. (New) The high phase order induction machine drive system of claim 94 wherein said harmonic frequency is an odd harmonic frequency.

96. (New) The high phase order induction machine drive system of claim 94 wherein said harmonic frequency is third harmonic frequency.

97. (New) The high phase order induction machine drive system of claim 34 wherein said alternating current output is variable between: substantially fundamental frequency output, substantially harmonic frequency output, and a combination of fundamental frequency output with superimposed harmonic frequency output.

98. (New) The high phase order induction machine drive system of claim 34 wherein said inverter system is further able to multiply the phase angle difference by a multiplicative factor in response to a signal to increase the impedance of the motor.

99. (New) The high phase order induction machine drive system of claim 34 wherein said inverter system is able to increase the phase angle difference in response to a signal to increase the impedance of the motor.

100. (New) The high phase order induction machine drive system of claim 51 wherein each of said subsets having a skip number of N/3, if N is a factor of 3; and (N/3)-1, rounded to the nearest integer, if N is not a factor of 3.

101. (New) The high phase order induction machine drive system of claim 51 wherein said inverter output comprises a harmonic frequency component.

102. (New) The high phase order induction machine drive system of claim 101 wherein said harmonic frequency component is an odd harmonic.

103. (New) The high phase order induction machine drive system of claim 101 wherein said harmonic frequency component is third harmonic.

104. (New) The high phase order induction machine drive system of claim 51 wherein said alternating current output comprises a fundamental frequency component and a harmonic frequency component.

105. (New) The high phase order induction machine drive system of claim 104 wherein said harmonic frequency is an odd harmonic frequency.

106. (New) The high phase order induction machine drive system of claim 104 wherein said harmonic frequency is third harmonic frequency.